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ABSTRACT

This collection of materials describes different types of computer applications and software that can help students with disabilities. It contains information on: (1) Easy Access, a feature of the systems software on every Macintosh computer that allows use of the keypad instead of the mouse, options for slow keys, and options for sticky keys; (2) CloseView, a software program that magnifies the screen display from 2 to 16 times; (3) the Laser PC4 laptop, a diskless laptop computer containing 2 megabytes of built-in programs and 128K of RAM to store all created files; (4) AlphaSmart, an inexpensive keyboard that allows students to enter and edit text and then transfer it to a Macintosh computer for formatting and printing; (5) six different types of word prediction software; (6) assistive technology for notetaking; (7) how portable keyboards help students; (8) writing tools; (9) word prediction word processing; (10) software tools to assist spelling, grammar, and outlining; (11) talking word processors; (12) multimedia software; (13) cognitive assistance; (14) instructional software; and (15) computer software for developing future skills. A list of resources for obtaining referenced tools is provided. (CR)

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ED 456 582

Zap 'Em with Assistive Technology

Notetaking
Modified Materials
Assistive Writing Tools
References
Organizational Tools
Cognitive Assistance
Adapted Access

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Elizabeth A. Lahm and Sandra K. Morrissette
George Mason University
CEC Spring 1994

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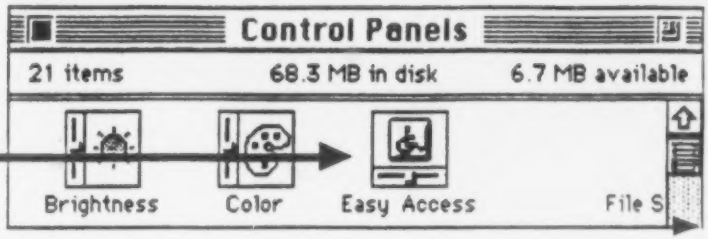
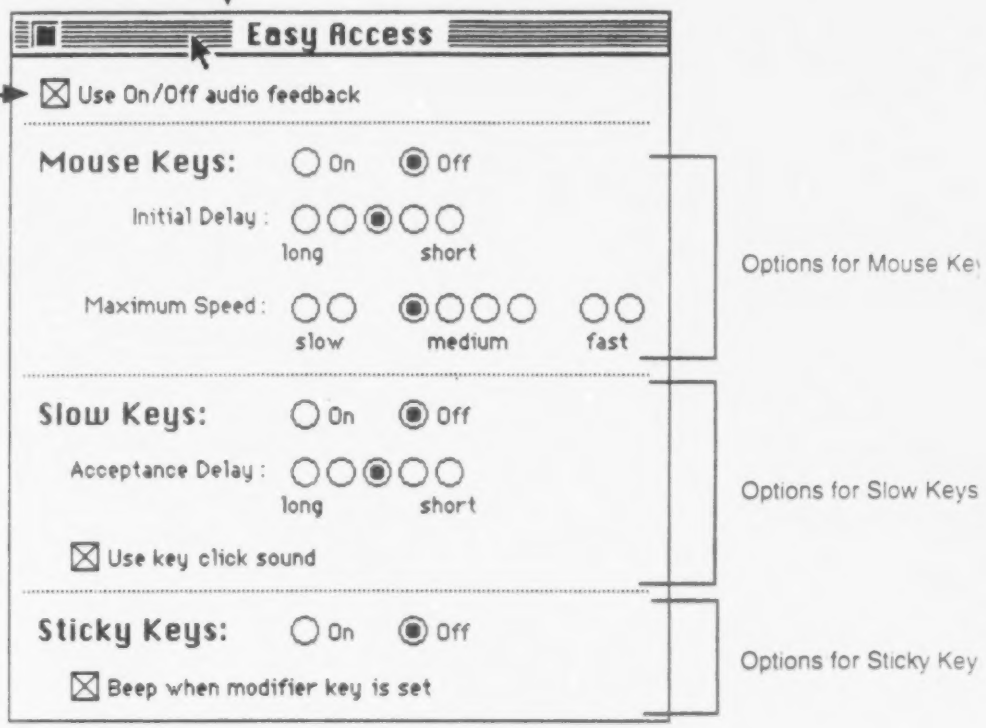
EC 308566

Macintosh Easy Access

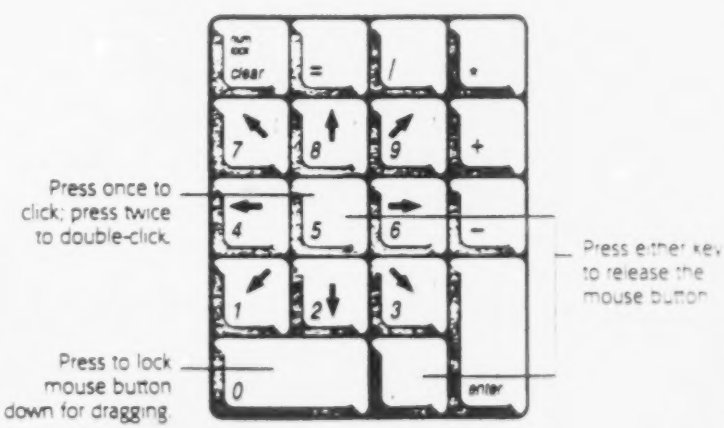
Easy Access is a feature of the system software on every Macintosh computer. With System 7 software, Easy Access appears as one of the Control Panels (under the Apple menu). Double-click on the Easy Access icon to get the Easy Access dialogue box.



An **X** in the checkbox means you'll hear a whistle when you turn a feature on (whistle goes up) or off (whistle goes down)


Easy Access
Use On/Off audio feedback
Mouse Keys: On Off
Initial Delay: long short
Maximum Speed: slow medium fast
Slow Keys: On Off
Acceptance Delay: long short
Use key click sound
Sticky Keys: On Off
Beep when modifier key is set
Options for Mouse Key
Options for Slow Keys
Options for Sticky Key

Mouse Keys allows you to use the numeric keypad on the right side of the computer (instead of the mouse) to control the movement of the pointer on the screen. With Mouse Keys on, you can click, drag, and perform all the usual mouse actions from the numeric keypad. You can adjust how quickly the pointer moves on the screen and how long the delay is before the pointer starts moving when you press a mouse key.



Slow Keys lets you type very slowly and ignores accidental keystrokes by delaying the acceptance of the next keystroke. Like a keyguard, this feature assists users who may accidentally touch several keys as they search for the one they want. You can turn Slow Keys on from the Easy Access dialogue box, adjust how long you want Slow Keys to delay acceptance of the next keystroke, and set it to make an audible click each time a key is pressed from the Easy Access dialogue box.

Sticky Keys enables you to type keyboard shortcuts (such as ⌘ -S for the Save command) without having to press the keys simultaneously. Turn Sticky Keys on from the Easy Access dialogue box or press the Shift key five times without moving the mouse. When Sticky Keys is turned on, you can type a keyboard shortcut by first pressing the modifier key (⌘ , Option, Control, or Shift) and then pressing the character key. An icon in the right end of the menu bar changes to indicate whether Sticky Keys is on and whether a modifier key has been pressed or locked

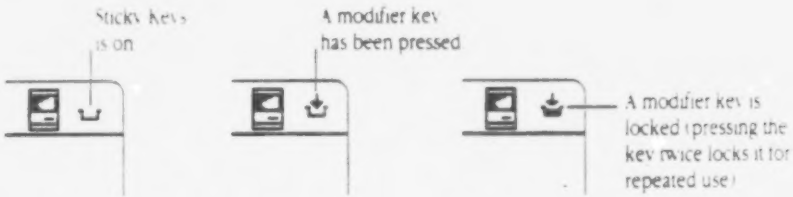

Sticky Keys is on
A modifier key has been pressed
A modifier key is locked (pressing the key twice locks it for repeated use)

Figure D-1 Icons for the Sticky Keys feature of Easy Access

CloseView

CloseView is a software program (on the systems disk called Tidbits) that magnifies the screen display from 2 to 16 times the regular size. To use CloseView:

- Place the CloseView icon in the System Folder and reboot the system
- Use the Control Panel to access CloseView settings
- Press ⌘ -option-X to turn CloseView on and off
- Press ⌘ -option-arrow to increase and decrease magnification

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Additional Adjustments from the Control Panel:

Keyboard

Under Keyboard, you can turn off the automatic repeat feature so that keys do not repeat when they are held down; the repeat rate and delay until repeat can also be changed.

Mouse

Under Mouse, mouse tracking and double-click speed can be adjusted. Tracking refers to the relationship between mouse movement and movement of the pointer on the screen; with slow tracking, the pointer moves about the same distance as the mouse

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A Computer for Every Student, Dream or Reality?

Dream

agine a portable computer that can be used to nd spell check documents, keep track of appoint- and expenses, store a telephone list, create a ook spreadsheet, be a calculator, write BASIC ms, and even wake you with an alarm! Also e that this laptop runs on A/C, or 4-AA batteries hours of continuous use, weighs 2 lbs., can print y to a printer, or export and import files to a tosh, IBM, or Apple II, and costs only $239!

is is not vaporware, but the Laser PC4 laptop, in over four years. Perfect Solutions now markets 4 directly to schools, businesses and individuals.

ess Laptop

e PC4 is a simple machine to understand and use. diskless laptop containing 2 meg of built-in pro- and 128K of RAM to store all created files. The s divided into 32K segments for each program. In rd processor this is about 15 pages of text. Once e named, they are saved. The scrollable LCD displays 4 lines by 40 characters, enough to keep ain of thought as you type. The PC4 keyboard is e and the unit includes A/C adapter, file-transfer re, cables and case.

e PC4 is available for purchase in either Macin- IBM version. But, in both cases, the PC4 is the t is the cables and file-transfer software that allow ork with an IBM or Macintosh. Because of this, e PC4 with a conversion kit can be connected to IBM and even an Apple II, and be used to transfer tween them. For schools with a mix of comput- s is a wonderful solution!

ndability

ddition to the built-in software, there is a ROM ion slot in the PC4. A Thesaurus, which contains ctionary and synonym list, is currently available. cartridges will include medical and legal diction- nd terminal emulation.

ng

ting is versatile. The PC4 can print to an Writer I or II, and any parallel device including dot-matrix, ink-jet, and HP laser printer. Printing to a StyleWriter or Apple laser printer is not supported, but this can be accomplished through a Macintosh.

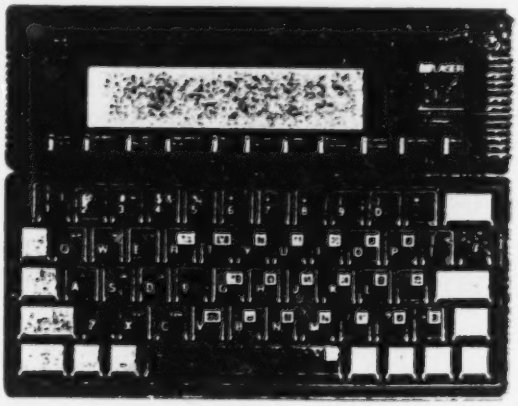
File Transfer to Mac, IBM, Apple II

Importing and exporting files from the PC4 is easy. The IBM and Mac versions of the PC4 include file-transfer software that is loaded on the hard drive of the host computer. The PC4 is then cabled to the COM port of an IBM, or the modem or printer port of a Macintosh. The IBM version uses PCTools to translate PC4 files into text files; the Macintosh version uses MacLink to create files usable by all Mac programs. With both PCTools and MacLink, file-transfer is a simple two-step process:

1. Import PC4 file with file-transfer program
2. Open converted PC4 file in the application

Once imported, the PC4 file can be saved to disk on the Mac or IBM. Files can also be exported to the PC4.

File-transfer between the PC4 and Apple II is accomplished via AppleWorks using BridgeIt, an AppleWorks patch program. Transferring files to the Apple II is an easy one-step process. After installing BridgeIt to AppleWorks 3.0 or 4.0, the AppleWorks "Other Activities" menu contains line 7 "PC4 Transfers." Files are transferred directly to the AppleWorks desktop. The PC4 is cabled to the modem or printer port of an Apple IIgs or IIc+, modem port of the IIc and Laser 128, and serial card of a IIe. Call us to discuss your cabling needs.



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Widely Used

Students in grades 3 to 6, unable to secure sufficient time in their computer lab, use the PC4 in their classrooms to learn keyboarding. Each class uses the PC4 thirty minutes daily. Within three weeks students type at 10 to 15 words per minute, and graduate to word processing using the same class set of PC4's, this time with printers connected.

In grades 7 to 12, students use the PC4 in their language classes to create stories at their desks. At the computer lab they upload their work into ClarisWorks for font and graphic enhancement.

The 11th and 12th grade journalism class similarly use the PC4 to produce a newspaper, except each journalist takes his/her PC4 on-site to the story.

In Special Ed classes, students having difficulty writing because of hand-writing problems find the PC4 to be a great aid, especially for correcting spelling.

At days end, students are allowed to check out PC4's from the media center. They are slipped into their cases, and checked out just like library books. Early the next morning at the computer center, students printout or download their work and then return the PC4's to the media center.

A conscientious school board official savors his PC4 during meetings. He prefers the lack of a large, back-lit screen since the built-in LCD allows only him to see the display. While fellow board members believe his typing is ambitious note taking, he knows that his precious time is spent catching up on correspondence!

A waste management company uses the PC4 to record the weight of garbage collected from each customer. At the end of each day the data is downloaded to their PC where invoices are generated.

Auto dealerships use a PC4 with customized software to create an anti-theft I.D.

The Reality

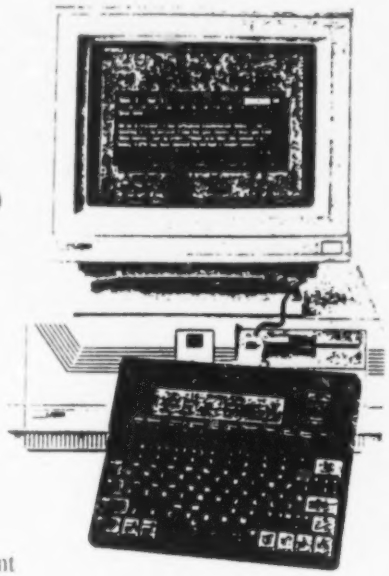
For years, computer educators have envisioned mobile computing where students and teachers sporting their own laptops are able to input and output information without regard to the different platforms of IBM, Apple II and Macintosh. They have not seen their vision materialize with the current crop of overpowered, battery draining, unaffordable lap-crushers. The PC4, while limited in screen size and memory, certainly fulfills this vision in terms of versatility of file transfer, long battery life, light weight, extensive software and low cost.

Built-in Software

Word Processor
Spell Checker - 80,000 words
Database: Telephone, Appointment, Expense, Personal
Spreadsheet (Lotus Compatible)
Calculator
Alarm Clock
BASIC
System Utilities

Hardware

High Contrast Blue LCD
4 line x 40 character display
128K SRAM
ROM Expansion Slot



Dimensions & Weight

10" (W) x 1.6" (H) x 7.6" (D)
2 lb. with batteries and case

Power Requirements

4 - AA Alkaline Batteries
A/C Adapter (included)

Battery Life

40 hours continuous use
60 days idle storage

Warranty

One year repair or replacement

The Cost

PC4 Macintosh or IBM version complete	$239
IBM conversion kit (connect PC4 Mac to IBM)	39
Macintosh conversion kit (connect PC4 IBM to Mac)	39
BridgeIt for AppleWorks	35
BridgeIt for AppleWorks site license	175
Thesaurus cartridge	35
Additional cables	12
Apple IIe serial card	50
DB25 adapter for serial card	8

Where to Buy

Perfect Solutions
12657 Coral Breeze Drive
West Palm Beach, FL 33414
Fax. 407-790-0108
Tel. 407-790-1070
Toll-free 1-800-726-7086

School PO's, charge & COD accepted. Shipping charges extra.

AlphaSmart™

The revolutionary smart keyboard that you have been waiting for.

Features

- One-key data transfer
- Macintosh-like keyboard
- 4 line by 40 character LCD display
- 32000 -character memory (15 pages of text)
- 8 separate files for storage
- Compatibility with all Macintosh® hardware and software
- Portability and low cost

AlphaSmart™ extends your students' access to Macintosh® computers.

AlphaSmart is a tool that lets students enter and edit text, then transfer it easily to a Macintosh computer for formatting and printing. And AlphaSmart is inexpensive. So it's a low-cost way for teachers—who never have enough computers in the classroom—to get more "keyboard time" for their students.

With AlphaSmart, there's no software to install, so your students can use it right out of the box. After they type in text, and do preliminary corrections, they're ready to transfer the file to the Macintosh. There are eight separate files available so that students from different sections can store files without interfering with each other's work or one student can store different files for different subjects.

Data transfer is simple. You start up a word processor, disconnect the Macintosh keyboard, plug the keyboard cable into AlphaSmart, and press the *send data* key. Your file is copied to the Macintosh—ready to save, format, and print. And you're ready to disconnect AlphaSmart, and pass it along to the next student (or, clear its memory).

AlphaSmart is powered by 2 AA alkaline batteries, by an AC adapter or by an optional rechargeable NiCad battery pack(2 AA batteries and an AC adapter are included in the package). Its advanced electronics allow approximately 100 hours of battery life. And there's no need to worry about losing data. A long-lasting lithium battery protects your students' work—even when the unit is turned off.

AlphaSmart works with all of the popular word processors, such as ClarisWorks®, Microsoft Works®, MacWrite®, WordPerfect®, and Microsoft Word®.

AlphaSmart answers educators' needs for cost-effective word processing in the classroom, in the lab, and for individual use.

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AlphaSmart™

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AlphaSmart™

Technical Specifications

System requirements

Any Apple® personal computer with an Apple Desktop Bus™ (ADB) interface, running System 6.x or System 7™ or later.

- Apple II GS
- Macintosh LC family
- Macintosh II family
- Macintosh Classic family
- Macintosh Quadra family
- Macintosh PowerBook family
- Macintosh Performa and Centris

Not Compatible with

- Mac Plus
- Mac 512

Product details

- Rugged, lightweight design
- 4-line by 40-character LCD display
- Full-featured keyboard with 80 keys—including *home*, *end*, and arrow keys to move the cursor, a *send data* key, and a *clear file* key
- Equivalent to a Macintosh keyboard when connected to your computer's ADB port
- Comes with 2 AA batteries and an AC adapter

Interface, connectors, and cable

- Apple Desktop Bus (ADB)
- Two ADB 4-pin mini-circular connectors
- Optional 3-foot (1 meter) ADB "Y" cable

Power requirements

AlphaSmart may either be powered by 2 AA batteries or connected via the AC adapter to a wall outlet, or by an optional rechargeable NiCad battery pack that recharges while the AlphaSmart is plugged into the wall. Alkaline batteries, which are included, will power the keyboard for approximately 100 hours. (If you use rechargeable NiCad batteries or the optional NiCad battery pack, the battery life is shorter.)

Data Storage

AlphaSmart saves your data—and your place in the text—even when you turn off the keyboard. So you don't ever have to worry about losing a file. Total of 32,000 characters (approximately 15 pages of text) of memory is divided into eight files: file one - 10,000 characters (or approximately five pages, file two - 4,000 characters or approximately two pages, and files three through eight -3,000 characters or approximately 1 1/2 pages each.

Size and weight

- Height: 1.65 in. (4.2 cm)
- Width: 11.8 in. (30 cm)
- Depth: 8.2 in. (20.4 cm)
- Weight: 2.0 lbs. (.91 kg)

One year warranty

Ordering Information

With your order, you'll receive:

- AlphaSmart Keyboard
- AC adapter
- Two AA Alkaline batteries
- User guide
- Warranty information

Optional Accessories:

- Rechargeable NiCad battery pack
- ADB "Y" cable
- Carrying case

For more information or to place an order, please contact your Education Sales Representative at:

or contact us at:

Intelligent Peripheral Devices, Inc.
5690 Lilac Blossom Lane
San Jose, CA 95124

Phone: (408) 737-9302
AppleLink: ALPHASMART

Volume discounts available.

A Comparison of Six Programs

Word Prediction Software

By Barbara Heinisch and Janice Hecht, Co-Directors, Adaptive Technology Lab, Southern Connecticut State University

The Adaptive Technology Lab at Southern Connecticut State University has significant experience in working with students who have physical, visual, and learning disabilities, offering computer access evaluations and training in adaptive hardware and software. Our goal is to enable university students to write their papers independently; word prediction software programs have proven to be a powerful productivity tool for many of these students.

More than 15 software programs offer word prediction for MS-DOS, Macintosh and Apple II platforms. (There are now programs such as Help U Type for Windows and a version of HandiWORD which work with Windows, too.) For the purposes of this comparison, the programs examined were: MindReader, KeyWiz and HandiWORD for MS-DOS computers; Predict It for Apple II; and Telepathic and Co:Writer for the Macintosh.

In a typical word prediction program, when the typist enters a letter, a list of words beginning with that letter is offered, with a number or other character preceding each choice. The typist then types the symbol preceding the desired word and that word is automatically typed into the text. If no word is selected, an additional letter can be typed and the word choices are then refined. For example, when a "t" is typed, a list of words beginning with "t" is offered. If the typist continues typing and enters an "r" instead of selecting a word from the list, a new list containing words beginning with "tr" is offered. Some of the newest programs also predict words by context. As a word is selected, a word which logically might follow it is offered. Many of the programs also incorporate abbreviation expansion, in which typing just a few letters can yield a longer word or an entire phrase.

For more information, contact the authors at: Adaptive Technology Lab, Southern Connecticut State University, 501 Crescent Street, New Haven, CT 06515; 203/397-4791 or via Internet HEINSCH@SCSU.CTSTATEU.EDU or HECHT@SCSU.CTSTATEU.EDU

Word prediction programs were originally created to speed typing for students with physical disabilities. Our experience, however, indicates that word prediction may offer even greater benefits for students with learning disabilities. Some of these students have problems with writing skills, and need a tool to speed their productivity using a computer. Some of them have word-finding problems. While they may have trouble producing a word, they can easily recognize it from a list. For the same reason, word prediction is an excellent resource for students for whom English is a second language. There are other students whose learning disabilities cause them to have severe spelling deficits. Most of them have had enough years of phonics instruction, though, to be able to provide the initial letters of a word and, using word prediction, produce a list that offers the desired word. For those with severe problems in reading or in perceiving the images on the screen, some programs include speech synthesis to read the word choices aloud.

In evaluating the potential benefit of word prediction for a particular student, we look at three key areas: the ability to recognize words, the need to look at the screen, and the individual's typing speed.

The student must be capable of either reading and recognizing words on screen or must be able to understand the synthesized speech. Some students use the speech even though they can recognize most words in the lists; the speech reinforces their visual reading and ensures their making the right choice.

Because prediction occurs with every typed letter, the student must remember to look at the screen regularly while typing. There are some students for whom the need to watch the screen or the actual activity on screen is too distracting; in these cases, we frequently advise against word prediction. Other students either concentrate so intensely on the keyboard while typing, have difficulty tracking between keyboard and screen, or type so quickly that they miss many of the offered word lists. An onscreen keyboard can solve these problems by focusing the student's attention on the screen the entire time.

It is important to assess the student's unassisted typing speed. Some students who already type fairly well find that word prediction actually slows them down. Generally, someone who types fewer than 20 words per minute can benefit from word prediction as a tool for increasing productivity.

Features

The comparison chart on pages 6-7 will give you an idea of what features are included in each program. Most of these features are self-explanatory, but some will probably not be clear to anyone who is unfamiliar with word prediction. A brief glossary of the key terms is featured in the box on page 5.

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PREDICTIVE WORD PROCESSORS

Programs

MindReader

MindReader (Brown Bag Software) is one of the original word prediction programs developed. It was created to help the business person whose secretary was away from the desk. (The publishers now offer a reduced price for purchasers using this program for people who are disabled.) When typing begins, there is a short word list offered at the first letter entered. If the typist ignores the list and continues typing, a list is offered again at the third letter, and refined with subsequent letters typed. There are also key shortcuts for -s, -ing, and -ed endings, but they are not always grammatically correct. MindReader also offers a feature they call the glossary, which stores up to 260 phrases of up to 700 characters. One or two keystrokes can generate an entire phrase, or an address or salutation, for example.

KeyWiz

KeyWiz is one of a number of word prediction software programs from Words+ Inc. Unlike MindReader, which is a self-contained word processing program, KeyWiz works transparent with a word processing program. When speech output is included with KeyWiz, it is called EZKeys. KeyWiz places a small window on the screen and offers 6 word choices at a time in response to the letter typed. It offers abbreviation expansion, with a maximum of 60 characters for each. The WSKE program incorporates the technology into a program which is transparent to WordPerfect or other word processing programs, thus allowing a much higher level of writing sophistication. It can be accessed by scanning, by the use of a joystick, track ball or just by using the arrow keys. KeyWiz allows for many more word modification choices than MindReader. Many suffixes can be added with one or two key strokes.

HandiWORD

HandiWORD (MicroSystems Software) is a program which works well with WordPerfect. HandiWORD places up to 9 word choices along the top line of the screen. For use with WordPerfect, the typist must first press the return key so that the typing will be visible on the second line. Word choices appear in alphabetical order in response to a letter typed. HandiWORD offers the opportunity to see more choices if the period key is typed. While a series of periods will begin in the document during the search for the word, they will disappear and be replaced by the word selected. The company which produces HandiWORD also offers HandiCODE, a Morse Code input program which works with it. HandiCHAT can be added for speech output. Microsystems Software has just introduced a version of HandiWORD for Windows.

Continued on page 8

Word Prediction Software Glossary

Auto Learn - The ability of the word prediction program to learn new words as they are typed. Some programs have the option to turn this feature off so that misspelled words do not automatically enter the dictionary.

Abbreviation expansion - The ability to type a representational code of a few keystrokes that will be expanded by the program into a full word, sentence, or phrase.

Number of word choices - Most programs give you the option of changing the number of guesses to choose from. (It has been shown that 7 is the optimal number of guesses for most users.)

Fixed/dynamic arrangement - Referring to the arrangement of word choice lists, a fixed arrangement stays in one place within the word prediction window as the user types. A dynamic arrangement follows the sentence being typed, usually creating a vertical word list either alongside or beneath the current letter being typed.

Hide word choices - The ability to make the word list disappear temporarily. In those programs requiring the user to type a number to select a word, it is necessary to be able to hide the word choices in order to type a number in the document. Statistical weighting - Assignment of a rate to each word, reflecting its frequency of use or how often it should appear as a choice. Some programs allow you to weight the words yourself.

Predicts in-line - The program offers a guess in line with the sentence being typed. Usually this word can be selected by pressing the spacebar.

Predicts ahead - Based on context, the program predicts the next word in the sentence without waiting for a letter to be typed.

Chop word - When a guess appears that begins with the intended word, a key can be pressed to "chop" off the rest of the word. For example, if you type "is" but the word "island" appears, you can chop off the "land" to get the word you intended to type.

Continued from page 5

Predict It

Predict It (Don Johnston Developmental Equipment) runs on an Apple IIe, IIc, or IIgs computer. It is both a basic word processing program and a word prediction program; the Predictor mode is accessed from within the word processing mode with a simple "hot key" command. When in the Predictor mode, the screen is split in two, with the document portion above and the prediction area below. As a letter is typed, it appears in the prediction area and an "in-line" guess is offered (this guess is in line with the sentence being typed), along with a list of numbered word choices below the sentence. The user can either accept the in-line guess by pressing the spacebar or select one of the other choices by typing the number in front of it. Another option is to scan the word choices with speech turned on and press the spacebar to select the word just spoken. Once the sentence is completed with ending punctuation, it is transferred to the document portion of the screen.
Predict It offers three "Grammar States:" Full, Mixed, and None. When Full grammar is on, in-line and numbered guesses are based on grammatical considerations. In the Mixed State only the in-line guess is based on grammar; the list contains the most commonly used words beginning with the letter typed. When grammar is turned off, none of the guesses are grammatically based. There are also single-key shortcuts for adding word endings, prefixes, and suffixes.

Telepathic 2.0 Predictive Word Accelerator

Telepathic 2.0 Predictive Word Accelerator (Madenta Communications) works transparently alongside other programs on the Macintosh. As letters are typed in the document window, word choices appear in a separate Telepathic window, which can be relocated anywhere on screen, can remain stationary or follow the cursor, and can display horizontal or vertical word lists. This latest version, just released, provides faster, more efficient word prediction, predicting both "this word" (the word being typed) and "next word" (the word most likely to follow). The ability to open and use multiple topics (dictionaries) at once also increases efficiency by focusing on desired topics. Custom topics can be created by importing any text document; the topics then contain all the words and word associations in that document, thereby enabling Telepathic to predict within context for this topic. With the latest version, Telepathic now includes synthesized speech in male, female, adult, and child voices, using MacInTalk, RealVoice, DecTalk, and other synthesizers. Other new features include abbreviation expansion and international language support.

Co:Writer

Co:Writer (Don Johnston Developmental Equipment) combines features of Predict It and Telepathic. Like Predict It, it creates a buffer line of text as the user types, offering in-line guesses; like Telepathic it works alongside other programs in a separate window that can be resized and relocated. The word lists can appear in either of two arrangements: the fixed list remains stationary at the left of the window, while the dynamic list moves along beneath the letters being typed.

The in-line prediction can be turned off, and there is an option to have Co:Writer predict ahead (guessing the next word). Words can be predicted either with grammar turned on (predicting according to context) or off (predicting words beginning with the letter typed). Co:Writer also offers synthesized speech options, reading the in-line prediction, the word list, the accepted word, or the finished sentence. The user can select a word by typing the number in front of it, pointing and clicking with the mouse, or scanning with speech.

Other Alternatives

Most people with severe physical disabilities use a combination of alternative input devices, such as headpointing, or using a mouse, trackball, joystick or single switch, selecting characters from an on-screen keyboard.

WordWriter is an on-screen keyboard with word prediction in which lists of words appear based on letter choices. Designed for the Macintosh, a system 7 version has just been released.

ScreenKeys is an on-screen keyboard for the Macintosh which works along with a word processing program or word processing with Co:Writer.

ScreenDoors is an on-screen keyboard program which incorporates Telepathic.

HeadMaster is a headpointing device which is available for either Macintosh or IBM compatible computers.

WiViK WREP (Writing Rate Enhancement Program) is an on-screen keyboard program for windows which offers word prediction and abbreviation expansion.

There is also **FreeWheel**, which incorporates a headpointing device with on-screen keyboard options and some good scanning programs.

PREDICTIVE WORD PROCESSORS

Comparison Chart

FEATURES	MINDREADER	HANDIWORD	E Z KEYS
• Platform	IBM	IBM	IBM
• Self-contained word processor?	Yes	No	No
• Dictionary	•	•	•
Number of words		3200	2500 +
Add words, phrases to dictionary?	Yes	Yes	Yes
Choice of dictionaries?	Yes	Yes	Yes
Save & load personal dictionary?	Yes	Yes	Yes
Delete or modify dictionary words?	Yes	Yes	Yes
Auto learn?	No	No	Yes
Abbreviation expansion?	No (700 char. max.)	Yes (128 char. max.)	Yes (60 char. max.)
• Display window	•	•	•
Change size of type?	No	No	No
Font choices?	No	No	No
Adjust size of window?	No	No	No
Adjust location of window?	No	Yes	No
Adjust number of word choices?	No	Yes	No
Always on screen?	No	No	No
• Word choice arrangement	•	•	•
Fixed or dynamic?	Dynamic	Fixed	Fixed
Alphabetic order?	No	Yes	No
Hide word choices?	Yes	Yes	Yes
Statistical weighting?	Yes	Yes	Yes
• Prediction	•	•	•
Predicts in-line?	Yes	Yes	Yes
Predicts ahead?	No	No	Yes
Predicts words and phrases?	Yes	Yes	Yes
Predicts by grammar and usage?	No	No	Yes
• Word modification	•	•	•
Add suffix?	No	Yes	Yes
Add prefix?	No	No	No
Add word endings?	Yes	Yes	Yes
Chop word?	No	No	No
• Preferences	•	•	•
Capitalize first word in sentence?	No	No	Yes
Space after period?	Yes	Yes	Yes
Space after word entered?	Yes	Yes	Yes
• Options	•	•	•
On-line help?	Yes	No	No (menu)
Speak word choices?	No	No	No
Speak finished text?	No	No (HandiChat)	No (WSKE)
Choose by scanning?	No	No	No (WSKE)
Choose by number?	Yes	Yes	Yes
Choose by pointing?	No	No	No (WSKE)
Alternate input?	Yes	Yes	Yes

PREDICTIVE WORD PROCESSORS

Comparison Chart

FEATURES	TELEPATHIC	CO:WRITER	PREDICT IT
• **Platform**	Macintosh	Macintosh	Apple IIe,IIc,IIgs
• **Self-contained word processor?**	No	No	Yes
• **Dictionary**	•	•	•
Number of words	2600	2,000•10,000•40,000	1500
Add words, phrases to dictionary?	Yes	Yes	Temporarily
Choice of dictionaries?	Yes	Yes	No
Save & load personal dictionary?	Yes	Yes	No
Delete or modify dictionary words?	Yes	Yes	No
Auto learn?	Yes	Yes	Yes
Abbreviation expansion?	Yes	No	No
• **Display window**	•	•	•
Change size of type?	Yes	Yes	No
Font choices?	Yes	Yes	No
Adjust size of window?	Yes	Yes	No
Adjust location of window?	Yes	Yes	No
Adjust number of word choices?	Yes	Yes	Yes
Always on screen?	No	No	No
• **Word choice arrangement**	•	•	•
Fixed or dynamic?	Both	Both	Fixed
Alphabetic order?	No	Yes	No
Hide word choices?	Yes	Yes	Yes
Statistical weighting?	Yes	Yes	Yes
• **Prediction**	•	•	•
Predicts in-line?	No	Yes	Yes
Predicts ahead?	Yes	Yes	No
Predicts both words and phrases?	Yes	Yes	No
Predicts by grammar and usage?	Yes	Yes	Yes
• **Word modification**	•	•	•
Add suffix?	No	Yes	Yes
Add prefix?	No	Yes	Yes
Add word endings?	No	Yes	Yes
Chop word?	No	Yes	Yes
• **Preferences**	•	•	•
Capitalize first word in sentence?	Yes	Yes	Yes
Space after period?	Yes	Yes	Yes
Space after word entered?	Yes	Yes	Yes
• **Options**	•	•	•
On-line help?	No	Yes	Yes
Speak word choices?	Yes	Yes	Yes
Speak finished sentence?	No	Yes	Yes (buffer line)
Choose by scanning?	No	Yes	Yes
Choose by number?	Yes	Yes	Yes
Choose by pointing?	Yes	Yes	No
Alternate input?	Yes	Yes	Yes

PREDICTIVE WORD PROCESSORS

WORD PREDICTION SOFTWARE RESOURCE LIST

Apple

Predict IT, $148.00
Don Johnston Developmental Equipment, 1000 Rand Rd. Bldg. 115, P.O. Box 639, Wauconda, IL 60084 ; 800/999-4660

IBM

EZ Keys (Keywiz, WSKE, Equalizer) $1195.00; $695 w/o speech
Words + Inc., P.O. Box 1229, Lancaster, CA 93534; 805/949-8331

MindReader, $89.95
Brown Bag Software, 2155 South Bascom, Suite 114, Campbell, CA 95008; 408/559-4545

HandiWORD, $295.00
Microsystems Software, 600 Worcester Road, Framingham, MA 01701

Help U Type, $395.00
World Communications 245 Tonopah Drive Freemont, CA 95459; 510/656-0911

Freeboard, SpeedScan, $695.00
Pointer Systems Inc. One Mill Street Burlington, VT 05401; 800/537-1562

WiViK WREP, $395.00
Prentke Romich Company 1022 Heyl Road Wooster, Ohio 44691; 800/262-1990

Macintosh

Co:Writer, $290.00
Don Johnston Developmental Equipment, 1000 Rand Rd. Bldg. 115, P.O. Box 639, Wauconda, IL 60084 ; 800/999-4660

Telepathic 2.0, $295.00
Madenta Communication, Box 25, Advanced Technology Centre, 9650 20th Avenue, Edmonton, Alberta Canada T6N 1G1; 800/661-8406

ScreenDoors, $350.00
Madenta Communications OR Prentke Romich Company

ScreenKeys, $50.00
Madenta Communication, Box 25, Advanced Technology Centre, 9650 20th Avenue, Edmonton, Alberta Canada T6N 1G1; 800/661-8406

Wordwriter, $150.00
MacIntyre Computer Systems 22809 Shagbark Birmingham, MI 48010; 313/645-5090

Headpointing Devices:

HeadMaster, $1195.00
Prentke Romich Company 1022 Heyl Road Wooster, Ohio 44691; 800/262-1990

FreeWheel, $1395.00
Pointer Systems Inc. One Mill Street Burlington, VT 05401; 800/537-1562

TAMinnesota 1994

Technology - The Equalizer

11th Annual TAM Conference on Special Education and Technology

February 3-5, 1994
To be Held During the St. Paul Winter Carnival!

Watch for your copy of the Advance Program in early fall.

Proposals are still being solicited. For more information, contact:

Elizabeth A. Lahm
Program Chairperson
George Mason University
Center for Human disAbilities
4400 University Drive
Fairfax, VA 22030
703/993-3670

Assisted Notetaking

Microcassette recorders

Voice Activated
Portable, Lightweight

Notebook Computers

Used When Adapted Access Needed
Used When Specific Software Needed
MS-DOS
Macintosh

Portable Computers/Keyboards

PC-4
Alpha Smart

Videotaped Lectures

NCR Paper/Copy Machine

Peer Shares Copies

Teacher-provided Assistance

Structured Outlines
Teacher Notes
Graphic Organizers

Portable Keyboards

How do they help?

Relief from paper/pencil tasks
Promotes organizational skills
Cost-effective word processor

PC-4

Macintosh (Apple cables), IBM
Software required to WP
40-character LCD display
Sloping keyboard
15 pages of text -- any length file
Extra utilities
Prints directly from printer

Alpha Smart

Macintosh, Apple IIGS
No software needed to WP
Works with all word processors
40-character LCD display
High keyboard (wrist rest needed)
15 pages of text -- in eight files
Download to WP -- then print

Writing Tools

Franklin Language Masters

Dictionary, Thesaurus
Spelling (Phonetically)
Speaking
Math Capabilities
Visit Their Booth!

Word Prediction Software

Software Utilities

Talking Word Processors

Motivating Features

Large Text
Variety of Fonts/Styles
Graphics

Software for Multimedia Reports

Word Prediction WP

How do they work?

Stand alone word processor
Works transparently
Type a letter — get choices
Speaks choices (reading difficulties)
Predict by context

How do they help students?

Speeds typing
Word retrieval
Spelling difficulties
Offers correct word choices

Who should use them?

Type 20 wmp or less
Need to look at the screen
Read and recognize words on screen

or

Understand synthesized speech

Software Utilities

Spelling Checker/Thesaurus

Within Word Processor

ClarisWorks

Bank St. Writer

Program Add-ons

Bank St. Writer (Thesaurus)

Work Transparently

Thunder 7

Grammar Checker

Need Basic Grammar Skills

Grammatik

Outlining

ClarisWorks

Macros

Perform Functions

Save Typing Time

Spelling Difficult Text

ClarisWorks

Bank St. Writer

Talking Word Processors

What do they do?

- Reads text during input
- Reads text after input
- Reads letters, words, sentences, all

How do they do it?

- Uses synthesized speech (robotic)
  - Echo for Apple II
  - Built-in to Macintosh
  - Speech Card for MS-DOS

How do they help students?

- Helps detect errors
  - Misspelled words
  - Incomplete/Run-on sentences
  - Grammatical errors
- Motivational

Examples

- *IntelliTalk*
- *Talking Text Writer*
- *Write Outloud*

Multimedia Software

What do they do?

Create electronic presentations
Incorporate text, sound, graphics
Record own voice

How do they help students?

Freed from pencil/paper tasks
Motivational

What do I need?

Apple II, Macintosh, MS-DOS Computer
Software
Speech synthesizer

Examples

HyperStudio GS, *HyperStudio Mac*
Kid Pix/Companion (Slide Show)
Kid Works 2 (Story Player)
MultiMedia Workshop

Cognitive Assistance

Calculators

- Assist with math functions
- Printing calculators
- Utility within software

Instructional Software

Functional Skills/Future Skills

Instructional Software

Drill and Practice

Repeated practice w/feedback
May include game format
- Keyboarding programs

Interactive Instruction

Instruction in a Process
- *Process Writer*

Content Instruction
- *Operation Frog*

Simulations

Problem solving, critical thinking
- *Carmen Sandiego* series

Group decision making
- *Decisions, Decisions* series

Conflict Resolution
- *Getting to the Heart of It*

Functional/Future Skills

Reference Skills

Navigation (Maps)

National Inspirer

Kid Pix (make a map)

Community Awareness

Community Exploration (CD)

Decisions, Decisions Series

Telecommunications

Kids Net

America Online

Prodigy

Technical Writing/Reading

Research Paper Writer

Classroom Newspaper Maker

Physical Sciences/Math Skills

Hip Physics

The Cruncher

Kid Cad

Where Can I Get That?

Broderbund (1-800-521-6263)
Carmen Sandiego (Mac/Apple/DOS)
Kid Pix/Companion (Mac/DOS)

Caere Corporation
OmniPage Direct (MAC)
OmniPage Professional (MAC)

Davidson (1-800-545-7677)
Cruncher, The (Mac/WIN)
Kid Cad (WIN)
Kid Works 2 (Story Player) (Mac/DOS/WIN/Mac CD/WIN CD)
MultiMedia Workshop (Mac/Mac CD)

Don Johnston Incorporated (1-800-999-4660)
Write Outloud (Mac)

Educational Resources (1-800-624-2926)
(Discount Software)

Grollier Electronic Publishing, Inc. (1-800-356-5590)
The New Grolier Multimedia Encyclopedia (Mac CD)

IntelliTools (1-800-899-6687, Ext. 501)
IntelliTalk (Mac/Apple/DOS)

Macmillan New Media
Macmillan Dictionary for Children (Mac CD/DOS CD/WIN CD)

MacWarehouse (1-800-255-6227)
Thunder 7 1.5.3 (Mac)
ClarisWorks 2.0 (Mac)

Reference Software (1-415-541-0222)
Grammatik 2.0 (Mac/DOS/WIN)

Roger Wagner (1-800-421-6526)
HyperStudio GS (Apple IIGS), *HyperStudio Mac* (Mac)

Scholastic (1-800-541-5513)
Bank St. Writer (Mac/Apple/DOS)
Process Writer (Mac/Apple/DOS)
Talking Text Writer (Apple)
Operation Frog (Mac/Apple/DOS)

The Software Toolworks, Inc. (1-415-883-3000)
World Atlas (Mac CD/DOS)
The Golden Book Encyclopedia (Mac CD)

Tom Snyder Productions (1-800-342-0236)
Classroom Newspaper Maker (Mac, WIN/Mac CD/WIN CD)
Decisions, Decisions Series (Mac/Apple/DOS)
Getting to the Heart of It (Video Kit)
Hip Physics (Mac)
National Inspirer (Mac/Apple/DOS)
Research Paper Writer (Mac, WIN/Mac CD/WIN CD)

West Code (San Diego)
InWords (Apple)

Vitesse, Inc. (La Puente, CA)
Quickie Hand Scanner (Apple)